

capture guide; at a first time when the mobile device is not in a similar orientation of the sample material and capture guide, determining to not capture the initial material sample image; and at a second time when the mobile device is in a similar orientation of the sample material and capture guide, capturing the initial material sample image, without user input to capture the initial material sample image at the second time. The second time may be after the first time.

[0018] Various pieces of metadata may be captured by the material data collection system and associated with the sample material swatch area. For example, this may include an International Standards Organization (ISO) sensitivity when the initial material sample image was captured and the second position for the first application provided alignment indicator. The sample material swatch area may be used in rendering a three-dimensional model on a geometric form, where the rendered three-dimensional model includes at least a portion of a surface of the three-dimensional model including the sample material swatch area. The surface of the three-dimensional model may include at least two or more copies of the sample material swatch area. Copies of the sample material swatch area may be only partial copies of the sample material swatch area. For example, smaller sample material swatch areas may need to be duplicated over ten times to be large enough to cover a surface of a geometric form. Edges of the geometry may not require an entire copy of the sample material swatch area and the material data collection system may identify and adjust the size of the copy accordingly.

[0019] In various implementations, transforming the initial material sample image, may be based upon a bounded polygon formed using a set of application provided alignment indicators, to render an alignment corrected material sample image. The set of alignment indicators may include four alignment indicators and the bounded polygon includes an irregular polygon. The set of alignment indicators included on the capture guide may form a regular polygon. The transformed initial material sample image may be used to identify a sample material swatch area, where the sample material swatch area includes at least one instance of a pattern found in the initial material sample image and stored on the mobile device the sample material swatch area and the initial material sample image. The sample material swatch area may be used to render a three-dimensional model on a geometric form, where the rendered three-dimensional model includes at least a portion of a surface of the three-dimensional model including the sample material swatch area.

[0020] In an implementation, the material data collection system includes providing a sample material and a capture guide on top of the sample material. The capture guide may include a cut out portion that allows at least a portion of the sample material to appear while the capture guide is on top of the sample material. For example, the sample material may be placed on a tabletop, which is made of steel or other magnetic material. The capture guide may include magnets or other types of fasteners that allow a user to move the capture guide or the sample material to prepare for capturing a digital image. For example, the sample material may be adjusted to eliminate or reduce creases before the digital image is captured. As another example, the capture guide may be shifted or moved so that a relevant portion of the sample material is shown by the cut-out portion. For instance, an edge of the sample material is moved out of the

cut-out portion, a defect of the sample material is moved out of the cut-out portion, or a complete instance of a pattern of the sample material is moved into the cut-out portion. The material data collection system may include capturing a digital image of the sample material and the capture guide on top of the sample material. The material data collection system may include transforming, based on the capture guide captured in the digital image, the portion of the sample material appearing in the cut-out portion. The material data collection system may support various transformations of the captured digital image. For example, the material data collection system may perform one or more of a color calibration of the digital image based on a color marker of the capture guide, a straightening of the digital image based on a straight line defined by the cut out portion of the capture guide, or a deskewing of the digital image based on a polygon formed by corners of the cut out portion. The material data collection system may determine a material swatch for the sample material, where the material swatch includes only the portion of the sample material visible in the cut-out portion.

[0021] In an implementation, the material data collection system includes color calibration including comparing, based on two different markers on the capture guide that are of the same color, a color differential for the two different markers as captured in the digital image. The color differential may include a difference in luminance of one marker as compared to the other marker. The material data collection system may include determining, based on the color differential, a gradient to compensate for the color differential of the digital image. For example, the gradient includes adjusting the color values according to the color differential within a preselected color space, such as a luminance value in a YUV color space or other color spaces. The material data collection system may include applying the gradient over the captured digital image by adjusting color values of the captured digital image. The gradient may be applied to points closest to one marker and gradually change until points closer to the other marker, so that the color differential has been minimized or removed. More than two markers may be considered when applying the gradient. Further, the process may be repeated by the material data collection system for markers of different colors.

[0022] In an implementation, the material data collection system includes chromaticity corrections. This may include comparing, based on two different white point markers that are visible in the initial material sample image, a chromaticity differential for the two different white point markers; determining, based on the chromaticity differential, a chromaticity gradient to compensate for the chromaticity differential; and applying the chromaticity gradient over the initial material sample image by adjusting chromaticity values. The material data collection system may also perform both chromaticity and color correction. The chromaticity correction may be performed before the color correction.

[0023] In an implementation, the material data collection system reduces an edge artifact of the sample material swatch area. The material data collection system includes detecting a computer-readable indication shown on the capture guide area of the initial material sample image; and determining a first direction for a sample material shown in the sample material area using the computer-readable indication. The first direction indicates a construction feature of the sample material. For example, the first direction may be